Situational Awareness
Assertiveness
Decision Making
Communication
Leadership
Adaptability/Flexibility
Mission Analysis

A Crash Course

By Lt. Dave Shuster

I taxied to cat 3 to be launched on a five-hour Operation Iraqi Freedom (OIF) mission. We were more than three months into cruise and had been flying OIF missions for a month. What was about to transpire would not be a typical OIF sortie. I was about to get the ultimate indoctrination into how crew resource management (CRM) can influence the outcome of an in-flight emergency. The question was, "Would the outcome be positive or negative?"

The cat shot was uneventful: No abnormal indications or noises were noted. I did my clearing turn and started to clean up. The gear-position lights extinguished normally, but the gear handle remained illuminated, indicating all gear were not up and locked. I thought the gear just was slow to retract, so I slightly pulled off power to remain below 250 knots to protect the gear from an overspeed. Then I waited… and waited… and waited. The light never went out.

I told tower I was climbing overhead to 2,000 feet and needed to speak with a Hornet rep. There was no scheduled recovery because I was on the first cycle of the day. I also wasn't sure how long a respot would take for any potential pull-forward.

Because I was an early launch, no one was airborne who could join for the inspection. As a result, tower coordinated a flyby. I flew the profile at 230 knots and 250 feet with the gear handle up. Tower and other aircraft on deck confirmed the left main-landing-gear doors were open. By this time, an S-3 had launched, and tower had him join on me for a visual inspection.

The S-3 said the port, forward, main-landing-gear door looked to be folded in half and had wedged itself between the remaining aft gear doors. Tower told me to remain overhead, and they would recover me during the next cycle. I climbed to 17,000 feet (our medium holding altitude) and set max endurance to save fuel.

While climbing, I contacted strike with sierra codes to pass to our ready room and advised them I would be monitoring button 18. Five minutes later, our maintenance officer (MO) called me from CATCC. I now had two sets of eyes and ears to help me with the situation. CATCC advised me that a Hornet would be joining for another visual inspection at 17,000 feet. After joining, the Hornet pilot confirmed the condition of

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the left main-landing-gear doors, and the decision was made to execute an emergency pull-forward.

The MO told me to try to extend the landing gear, with the other Hornet flying formation, so that the gear could be visually confirmed down-and-locked. The thought process here was to make sure if the gear would not come down, we would have plenty of time and fuel to troubleshoot. I tried to lower the landing gear, but only the right main and nose gear successfully extended down and locked. This was my first indication the problem was a little more serious than I originally had thought.

The MO began reading the steps for "landing gear unsafe/fails to extend," while others began coordinating tanker and divert options. As I worked through the checklist items, I was told the divert field would be Ali Al Salem in Kuwait, and the ground crew at the airfield already were in the process of rigging the short-field arresting gear. We eventually completed the "landing gear unsafe/ fails to extend" checklist twice without success.

I flew toward the divert field while the S-3 again was vectored to my position, so the other Hornet and I could receive fuel. The other Hornet would stay with me throughout the divert. My wingman worked wonders helping me deal with the "language barrier" of the air-traffic controllers in the region. Although the decision was made to take an arrested landing in Kuwait, I still wasn't in the clear.

Because I was supposed to go on an OIF mission, my ordnance consisted of bombs, flares, a loaded gun, and a Sidewinder on the left wingtip. In addition, I was configured "goofy," meaning the drop tanks are mounted on the centerline and right, inboard, wing station.

I vividly remember the next question the rep asked, "306, which station is the 'Winder loaded on?"

I quickly answered, "The AIM-9 is on station 1," meaning the left wingtip.

I promptly followed this statement with a very disappointed, "Yeah, it's on the left wing."

Wingtip missiles can't be jettisoned, only shot. It sunk in that if I landed with the left main in the up position, I'd have to drag a live Sidewinder along the ground as I came to a stop.

In accordance with NATOPS, the rep began reading the "Landing Gear Malfunction Landing Guide."

A few steps needed to be followed for "one main landing gear retracted or trailing." First, I needed to make a fly-in arrested landing. Because the ship already had coordinated with the airfield, the gear was rigged, and they were ready for my arrival. If the ship had been blue water, the only course of action for this emergency would have been a barricade arrestment.

Second, I needed to jettison all external ordnance. We knew we couldn't jettison the Sidewinder, so we focused our efforts on the two GBU-38s located on the left and right, outboard, wing stations. The S-3 pilot, who by this time had more than earned his weight

in gold, began offering up his services as a sea-search platform and swept the ocean for a clear area to jettison. The MO began reading the steps for select jettison over the radio. I followed them word-for-word and replied when I had completed each step. However, because the gear was not up and locked, I was unable to select "jettison the bombs." To make sure it wasn't a procedural error, we tried once again from the beginning of the procedure. Unfortunately, the second attempt produced the same results. Finally, I had to emergency jettison the bombs, which meant the two fuel tanks were jettisoned as well. Because I was forced to jettison the tanks, I couldn't comply with step three, which states, "Retain and depressurize empty external fuel tanks." The idea behind keeping the drop tanks is they may help prevent aircraft damage during landing.

As expected, the language barrier began to present itself as the other Hornet pilots began talking with Kuwait Center. To help drive home the point I was declaring an emergency, I squawked 7700. The rep quickly read the two remaining steps to the procedure just before we lost radio contact with him; we were out of range.

We subsequently were cleared for the short-field arrestment on 30L at Ali Al Salem. I had one shot to grab the cable. If I missed the cable, I had to make sure I had enough airspeed before the left wing touched down to take the jet flying again. As I began my descent, I searched the approach end for the exact location of the cable. As we got closer, I remember saying, "Well this is not what I thought I would be doing today." The pilot in the other Hornet replied with a forced laugh. I soon spotted the cable.

As I tried a fly-in arrestment, I concentrated on the final two aspects of the procedure the MO had said several times before losing radio contact. He said to make a minimum-descent-rate landing and to hold the damaged gear off the deck until engagement.

I spent the next few moments collecting my thoughts. I thought about what I would do if I didn't catch the cable; I thought about whether or not I was sitting on the ejection-seat handle; I thought about holding the wing off as long as possible to prolong the impending swerve; I thought about how I was going to keep the plane on the runway; and I thought about how I quickly would get out of the aircraft once it came to a stop.

As I approached the gear, my only thought was to keep the plane off of the deck until the very last second. I modulated the power to float the landing as long as possible. At the very last second, I took a little power off the jet, and 306 settled onto the runway. Once I felt the

plane touch down, I immediately went to full afterburner and started programming in right stick. I figured if I missed the gear or the hook skipped the wire, full afterburner was the best way to make sure I had enough energy on the jet to fly again. I held that wing off the runway for what seemed like an eternity. I then heard the words I was hoping to hear, "Good cable!"

My wingman saw the cable begin to stretch as the hook engaged it. I felt the aircraft slow, and I started to slowly pull the power to idle. I continued to "fly" the jet as the cable paid out in an attempt to prolong the inevitable. As the jet continued to slow, it began to slowly lean to the left.

As the wing touched the pavement, the aircraft swerved violently to the left. I counteracted this movement with opposite rudder. As the nosewheel grabbed, a very similar motion to the right immediately would follow the left movement. This sequence repeated itself several times until the aircraft came to a stop on the runway.

Once all motion ceased, I secured the engines, unbuckled, opened the canopy, and egressed the aircraft. I didn't hesitate when I jumped from the LEX to the ground; I just didn't want to be anywhere near the aircraft. I jogged to the side of the runway and looked over my shoulder. The Hornet just was sitting there, silent, motionless, and almost peaceful. As the crash crew arrived, I walked toward them, and they greeted me with a relieved smile.

I walked away from this incident without a scratch. It wasn't pilot skill, circumstance, or dumb luck that afforded such an outcome, but the culmination of a lot of hard work and valuable inputs from many people. Sometimes, we in the single-seat community think that crew resource management may not apply to us like it does in other communities. That thought process couldn't be further from the truth. A lot of people from a lot of different platforms were involved throughout the various stages of this emergency. Each knew his role and effectively played his part, offering only pertinent information at the appropriate time. Those who were not involved remained observers and only spoke when the situation warranted it.

This scenario shows how CRM is supposed to work and confirms why we preach CRM concepts over and over, time and time again. Quite simply, it works.

Lt. Shuster flies with VFA-146.

Mishap-Free Milestones

VFA-27	80,000 hours	18 years
HSM-41	130,000 hours	23 years
HMM-161	50,000 hours	11 years
HMH-362	65,000 hours	22 years
VP-46	288,000 hours	42 years
VP-69	75,302 hours	25 years
HMH-466	60,000 hours	21 years
VMA-223	60,000 hours	16 years

Special recognition:

Aviators flying the MH-60S have completed 100,000 hours of mishap-free operations, a first in Naval helicopter aviation.

SK1 Joyce Ingle recently retired from VR-58. She had amassed more than 16,000 hours of flight time during mishap-free operations in C-9A/B and C-40A aircraft. Well done.

SK1 Joyce Ingle